

# Little Lessons From History

by *Bruce Taylor*

## CHAPTER5: The doings of JADE

I was TPF Systems Manager at KLM from the spring of 1976 till the autumn of 1986: more than 10 years. By now most of you taking the time to read this series will realise that a chapter cannot be read in isolation and this one will be incomprehensible if you do not recall what was in previous chapters. In view of the two month gap between issues, I hope this is not too off-putting, but unfortunately I can do nothing about it.

In chapter 4 we covered the activities of the IPSS: the “Keeper of the TPF Requirements List” through the 1970’s and early 1980’s. Although this group did sterling work and IBM was an active and supportive participant, we were never happy with the speed with which IBM actually implemented the things we agreed upon. In our eyes it was painfully slow. As IBM continually pointed out, the product was free, at least until TPF1 arrived, and the resources IBM was willing to expend on something given away for free were severely limited. Our pointing out that the hardware we purchased from IBM cost an arm and a leg, and we could not even utilise all we had to install to its fullest extent, was to no avail. In those days IBM ruled, OK!

With the name change from ACP to TPF and the availability of TPF1 as a chargeable licensed product in 1980, things were going to change, right? They did, but not quite in the way we users in the international airline community hoped and expected. JADE got in the way.

The really big users of TPF in the US, American’s Sabre system in particular, were running out of processing capacity. All releases of the product, up to and including TPF1, were still a single I-stream system: they could not do any kind of multi-processing, neither tightly-coupled nor loosely-coupled. For many years in the 1970’s Sabre had been bouncing along right on the bleeding edge of the maximum achievable processing capacity and growth rates were constrained by CPU I-stream technology, not by the market on offer.

In 1978 Sabre had taken the bull by the horns and decided to implement multi-processing (4-way loosely-coupled) in ACP8 together with the other big users of the day United, TWA and Eastern plus support from IBM. This project, SNAP (Sabre Network of ACP Processors), was primarily driven by and funded by Sabre and was one of the greatest achievements and (ultimately) greatest contributions made to the progress of TPF by a single user. The genius who drove that through to a successful conclusion as technical project manager was Tom Flynn, one of the great men of the TPF world and nowadays in charge of the Australasia branch of Datalex based in Melbourne. However, here is the rub, SNAP became operational mid-1980, which was a half year after TPF1

had become available and IBM had announced that ACP8 support would cease. Consequently, the big four were caught between a rock and a hard place.

Although the three large US users which had been involved in SNAP were heading in the same direction with processing requirements as Sabre had been, none of the remaining TPF users (including those of us in the international sphere) were anywhere near that big. Hence, those big four US systems banded together, ignoring the IPSS of which they were members, to make a pre-emptive strike. This Gang of Four wanted performance; the rest of us wanted function.

IBM decided that their greatest economic interest lay with the Gang of Four and the JADE project was born. It was a joint development effort between the big 4 and IBM to produce TPF2: the first multi-processing release of TPF using SNAP provided by Sabre plus some other bits and pieces (primarily Eastern’s Multiple Database Facility, MDBF). This project absorbed all of IBM’s TPF time, energy and development resources for over 3 years and TPF2.1 did not see the light of day till August 1983. From TPF2.1 onwards we have had the separately charged HPO option which achieves what JADE successfully produced: loosely-coupled multi-processing and MDBF.

JADE was something we outside the US watched helplessly with great trepidation from the sidelines. It was always unclear to me why it was decided to do 8-way loosely-coupling of single I-stream machines first. The logical development of processors was from single I-stream machines to multi-I-stream machines (i.e. tightly-coupled) and then on to loosely-coupling multi-I-stream machines. Because Sabre had already done it the other way around with SNAP, JADE did too. In retrospect that may not have been such a bad thing, since loosely-coupling is technically more complex than tightly-coupling. Nevertheless, it took another 5 years (TPF2.4, October 1988) after JADE completed before tightly-coupled support was available from IBM.

Apart from the big 4, nobody in the user community implemented loosely-coupled in the 1980’s, but most installations jumped onto tightly-coupled when it was available. Even now in 2001, apart from the successors of the original Gang of Four (Sabre, Galileo, Worldspan and Amadeus), only a few installations ever went to loosely-coupling (to my knowledge only British Airways, Japan Airlines, Swissair/Atraxis and VISA).

I think JADE stood for something like: Joint Application Development Environment, but what’s in a name? In any case, JADE meant (as far as we outside the Gang of Four were concerned)

that TPF development went to sleep for more than 3 years and we were, to put it diplomatically, extremely unhappy with the whole business. In the international airline community we felt very strongly that we had been abandoned by IBM, that IBM was only interested in the wishes of the Gang of Four and that we were out in the cold. We were lost souls crying helplessly in the wilderness with no hope that any of our TPF requirements, not even the simple ones, were likely to see the light of day for many, many years to come. This situation led to two things, more by accident and frustration than by design:

- The IPSS was incapacitated and slowly faded away, leaving a partial vacuum for dealing with TPF requirements from the early 1980's until the TUG started to run seriously with it late in the 1980's.

- ALCS came into existence.

In many ways, ALCS was an anti-JADE reaction, but that's another story for another chapter. On the other hand, if we had had no JADE, then Amadeus would probably be a Unisys USAS based system, but that's also another story for yet another chapter.

*Bruce Taylor – Amsterdam, August 2001*

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